

Honeywell International, Inc.***Full-Scale Implementation of Automated Demand Response*****Abstract**

Honeywell is demonstrating, on a utility program scale, commercial acceptance of automated demand response (autoDR) working with Southern California Edison (SCE) and Pacific Gas and Electric Company (PG&E). Honeywell is providing a turnkey utility-style program effort to sign up and implement technology for commercial and industrial customers whose average electric load exceeds 200 kW. Large-scale customer adoption of autoDR enables SCE and PG&E to initiate and automatically execute customized load shedding and other strategies in response to peak load event notifications or price signals.

Honeywell provides all aspects of customer delivery for the autoDR program, including customer audits, installation of customer-sited automated load control devices, and recommendations for optimal demand response strategies.

This project coincides with the California utilities' adoption of dynamic peak pricing (critical peak pricing or CPP). CPP is a mandatory tariff for new, large commercial customers that will push electric rates approximately 10 times higher during high electric demand days, but offer customers a lower daily rate for non critical peak days.

Smart Grid Features

Advanced electricity service options involve existing SCE and PG&E demand response programs and new enabling technologies. The project deploys control systems that integrate with existing energy management, data logging, alarming, scheduling, and network systems to provide customers with tools for optimal responses to demand control events, dynamic pricing, or time-of-use rates. The control systems are equipped with Internet connectivity to communicate with a demand response automation server (DRAS) and provide Web serving capability for supporting energy management system operations. The DRAS responds to demand response event signals from the California Independent System Operator (CAISO) and sends commands over the Internet to the control systems, which respond by automatically adjusting designated equipment including lighting, air-conditioning, ventilation, and refrigeration. The project involves the installation of control systems and/or energy management systems for up to hundreds of facilities ranging from retail stores to manufacturing plants. The project includes deployment of pulse interface boxes, or "shadow meters," to complement the energy management functionality of the control systems installed by Honeywell. The shadow meters collect electricity use data at predetermined intervals and provide the data in real time to facility operators so that they can take additional actions to reduce peak loads or otherwise optimize the level and timing of electricity use. The metering data is used for demand response market settlements with CAISO.

At-A-Glance

Recipient: Honeywell International, Inc.

State: California

NERC Region: Western Electricity Coordinating Council

Total Budget: \$ 22,768,726

Federal Share: \$11,384,363

Key Partners: Southern California Edison and Pacific Gas and Electric Company

Project Type: Customer Systems

Equipment

- Up to 241 Energy Management Systems

Advanced Pricing Programs

- Time of Use
- Dynamic Pricing (Critical Peak Pricing, Peak-Time Rebate, Real-Time Pricing)

Key Targeted Benefits

- Reduced Electricity Cost for Customers
- Reduced Operating and Maintenance Costs
- Deferred Investment in Generation
- Reduced Greenhouse Gas Emissions

Honeywell International, Inc. (continued)

Advanced pricing programs include existing time-of-use rates and dynamic pricing options offered in conjunction with SCE's existing flat and tiered rates. Dynamic pricing options include critical peak pricing and real-time pricing.

Timeline

Key Milestones	Target Dates
Develop and initiate marketing plan	Q2 2010
Communication infrastructure specified	Q2 2010
Develop initial load shedding strategy	Q3 2010
First phase of deployment completed	Q3 2010
Load curtailment goal achieved	Q3 2012

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